—PRODUCT INFORMATION—

6LJ8

Triode-Pentode

The 6LJ8 is a miniature tube containing a medium-mu triode and a sharp-cutoff pentode. It is designed primarily for use as a combined triode oscillator and pentode mixer in VHF television receivers.

GENERAL

ELECTRICAL

Cathode - Coated Unipotential

Heater Characteristics and Ratings

Heater Voltage, AC or DC*	6.3±0.6	Volts
Heater Current‡	0.4	Amperes

Direct Interelectrode Capacitances§

Pentode Section

Grid-Number 1 to Plate: (Pg1 to Pp), maximum	0.015	pf
Input: Pg1 to (h + k + Pg2 + Pg3 + i.s.)	5.5	pf
Output: Pp to (h + k + Pg2 + Pg3 + i.s.)	3.4	pf

Triode Section

Grid to Plate: (Tg to Tp)	1.4	pf
Input: Tg to (h + k + Pg3 + i.s.)	2.4	pf
Output: Tp to (h + k + Pg3 + i.s.)	2.0	pf

MECHANICAL

Operating Position - Any
Envelope - T-6 1/2, Glass
Base - E9-1, Small Button 9-Pin
Outline Drawing - EIA 6-2

Maximum Diameter	0.875	Inches
Minimum Diameter	0.750	Inches
Maximum Over-all Length	2.187	Inches
Maximum Seated Height	1.937	Inches

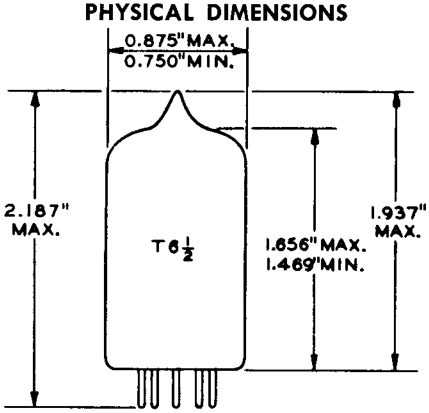
MAXIMUM RATINGS

Design-Maximum ratings are limiting values of operating and environmental conditions applicable to a bogey electron tube of a specified type as defined by its published data and should not be exceeded under the worst probable conditions.

The tube manufacturer chooses these values to provide acceptable serviceability of the tube, making allowance for the effects of changes in operating conditions due to variations in the characteristics of the tube under consideration.

The equipment manufacturer should design so that initially and throughout life no design-maximum value for the intended service is exceeded with a bogey tube under the worst probable operating conditions with respect to supply-voltage variation, equipment component variation, equipment control adjustment, load variation, signal variation, environmental conditions, and variations in the characteristics of all other electron devices in the equipment.

PHYSICAL DIMENSIONS

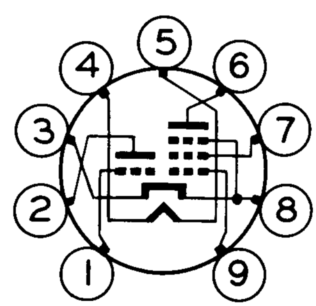


EIA 6-2

TERMINAL CONNECTIONS

Pin 1 - Triode Grid
Pin 2 - Triode Plate
Pin 3 - Cathode
Pin 4 - Heater
Pin 5 - Heater
Pin 6 - Pentode Plate
Pin 7 - Pentode Grid Number 2 (Screen)
Pin 8 - Cathode and Pentode Grid Number 3 (Suppressor)
Pin 9 - Pentode Grid Number 1

BASING DIAGRAM



EIA 9GF

MAXIMUM RATINGS (Cont'd)

DESIGN-MAXIMUM VALUES

	Pentode Section	Triode Section	
Plate Voltage	280	280	Volts
Screen Supply Voltage	280	---	Volts
Screen Voltage - See Screen Rating Chart			
Positive DC Grid-Number 1 Voltage	0¶	0	Volts
DC Cathode Current	20	20	Milliamperes
Plate Dissipation	2.0	2.0	Watts
Screen Dissipation	0.5	---	Watts
Heater-Cathode Voltage			
Heater Positive with Respect to Cathode			
DC Component	100	100	Volts
Total DC and Peak	200	200	Volts
Heater Negative with Respect to Cathode			
Total DC and Peak	200	200	Volts
Grid-Number 1 Circuit Resistance			
With Fixed Bias	0.25	0.5	Megohms
With Cathode Bias	0.5	1.0	Megohms

CHARACTERISTICS AND TYPICAL OPERATION

CLASS A_1 AMPLIFIER#

	Pentode Section	Triode Section	
Plate Voltage	125	125	Volts
Screen Voltage	125	---	Volts
Grid-Number 1 Voltage	0	0	Volts
Cathode-Bias Resistor	33	68	Ohms
Amplification Factor	---	40	
Plate Resistance, approximate	125000	5000	Ohms
Transconductance	13000	8000	Micromhos
Plate Current	12	13	Milliamperes
Screen Current	3.5	---	Milliamperes
Grid-Number 1 Voltage, approximate			
Ib = 30 Microamperes	-4	-6.5	Volts

NOTES

* The equipment designer should design the equipment so that heater voltage is centered at the specified bogey value, with heater supply variations restricted to maintain heater voltage within the specified tolerance.

‡ Heater current of a bogey tube at Ef = 6.3 volts.

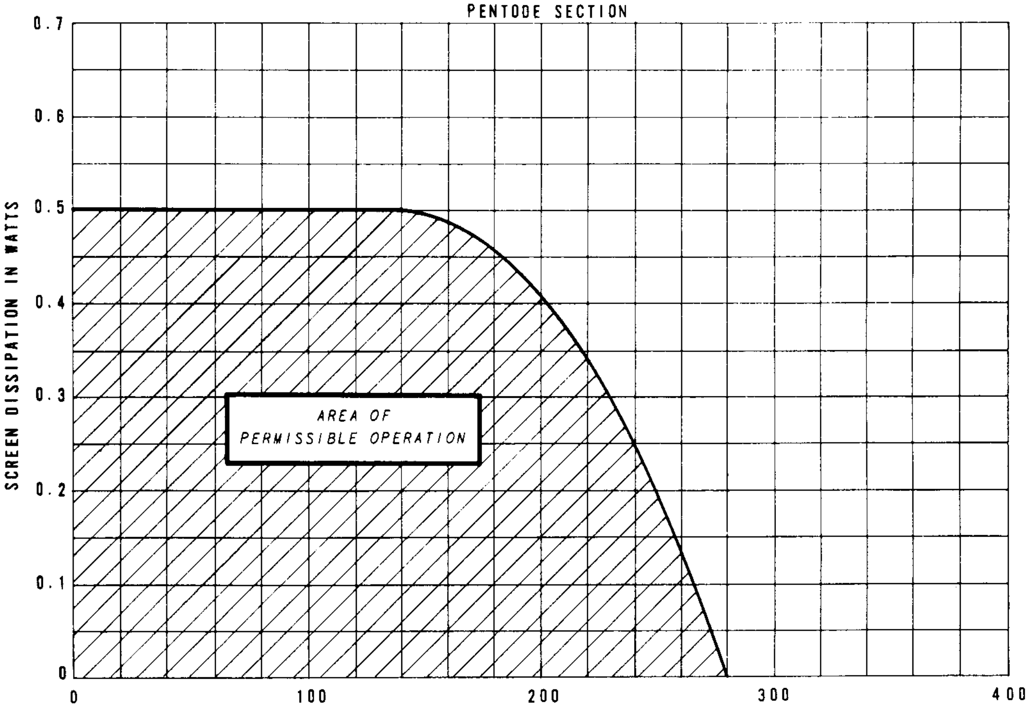
§ With external shield (EIA 315) connected to cathode.

¶ Control grid to cathode spacing of the pentode section of this tube is of such low order of magnitude as to preclude the use of voltage between these elements of more than 30 volts dc or peak ac in commercial tube checkers and shorts-indicating devices, particularly where mechanical excitation of the tube is employed.

Each section measured separately and with cathode-bias resistor indicated. Section not under test is floating.

SCREEN RATING CHART

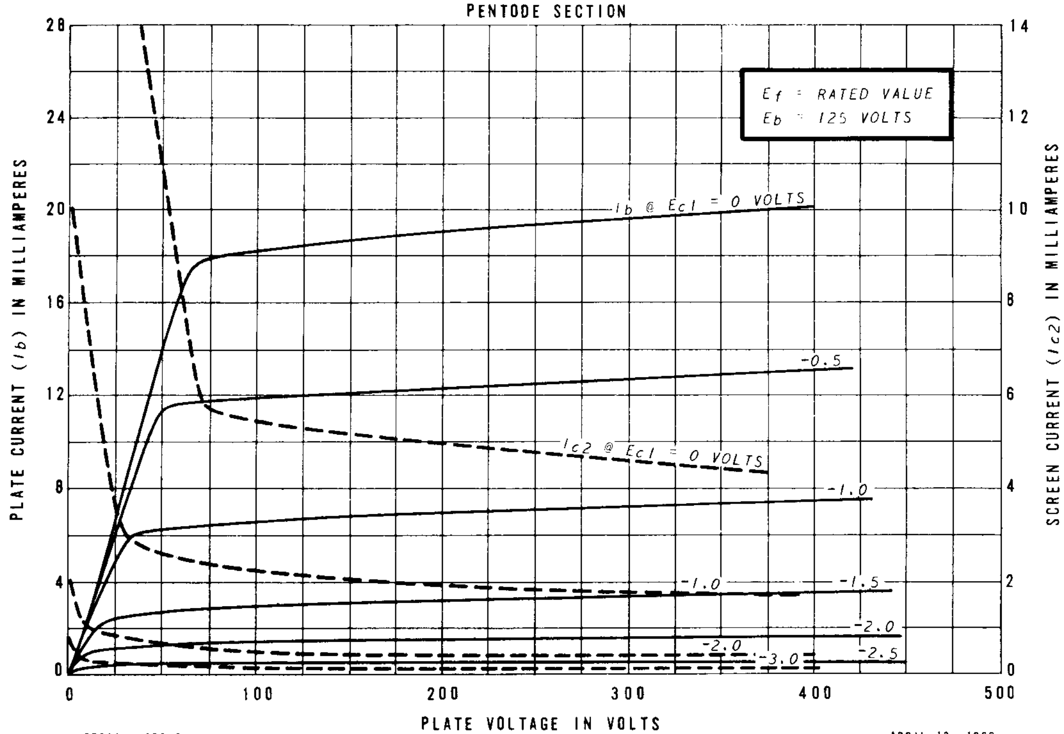
PENTODE SECTION



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AVERAGE PLATE CHARACTERISTICS

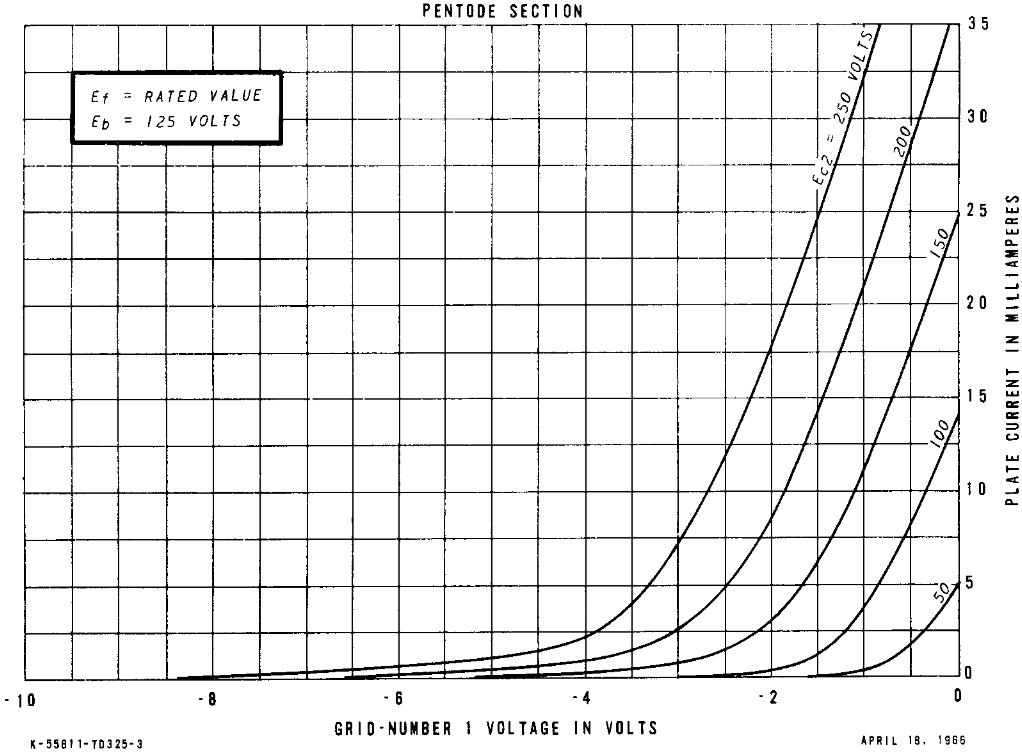
PENTODE SECTION



K-55611-TD325-2 APRIL 18, 1966

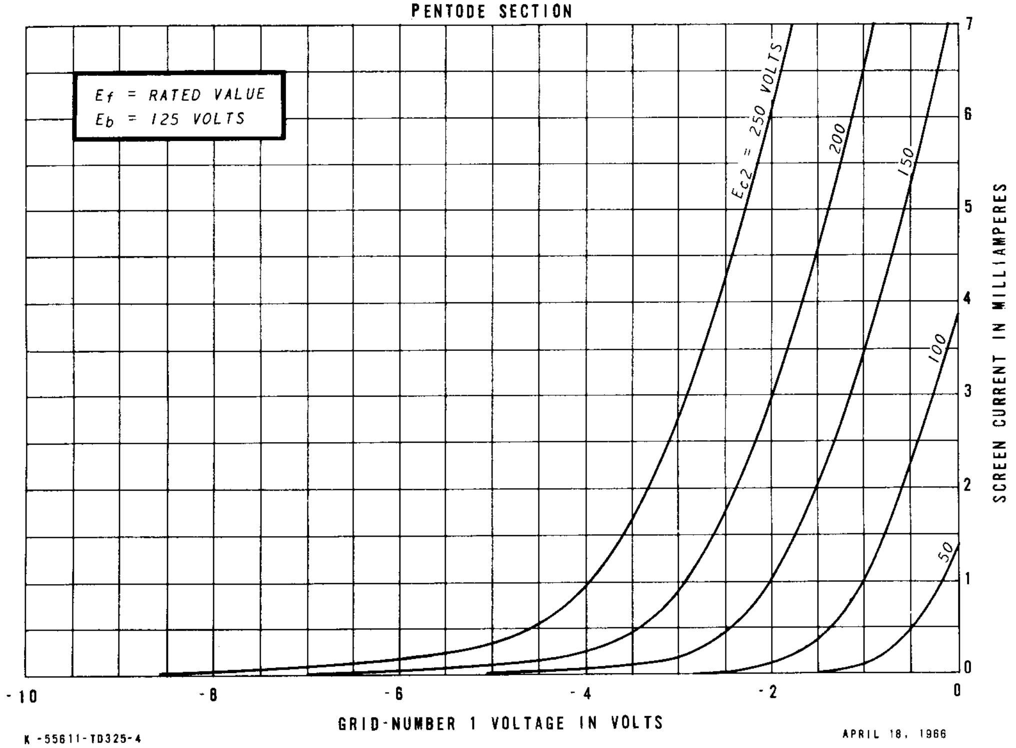
AVERAGE TRANSFER CHARACTERISTICS

PENTODE SECTION



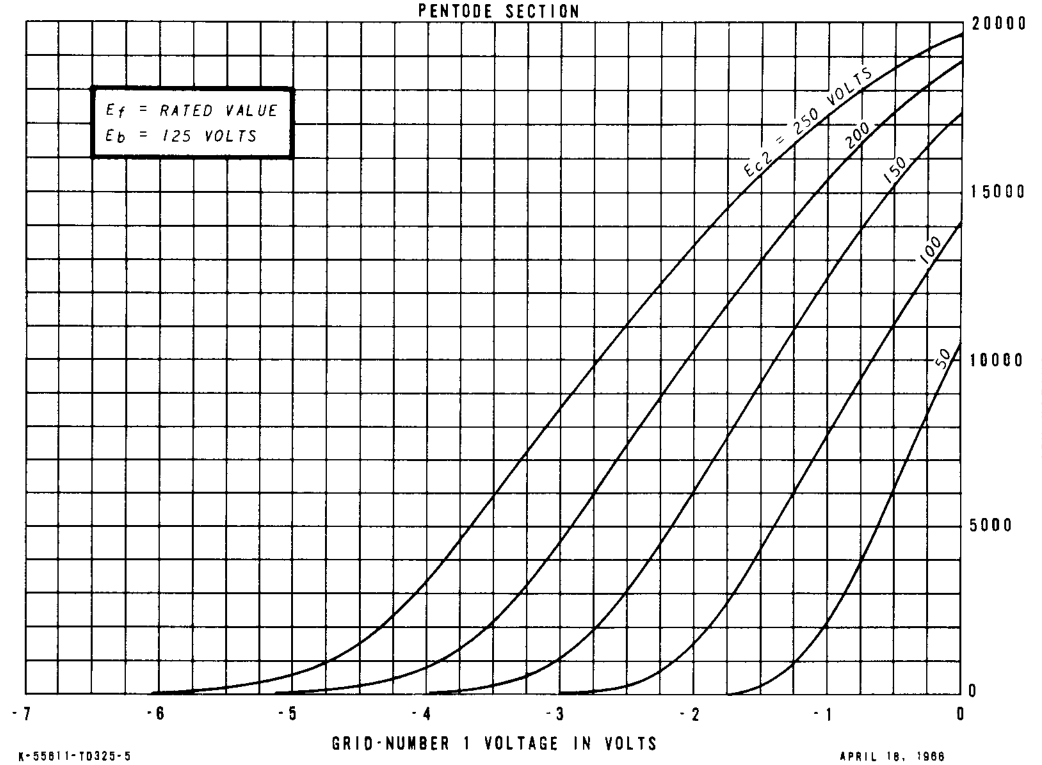
AVERAGE TRANSFER CHARACTERISTICS

PENTODE SECTION



AVERAGE TRANSFER CHARACTERISTICS

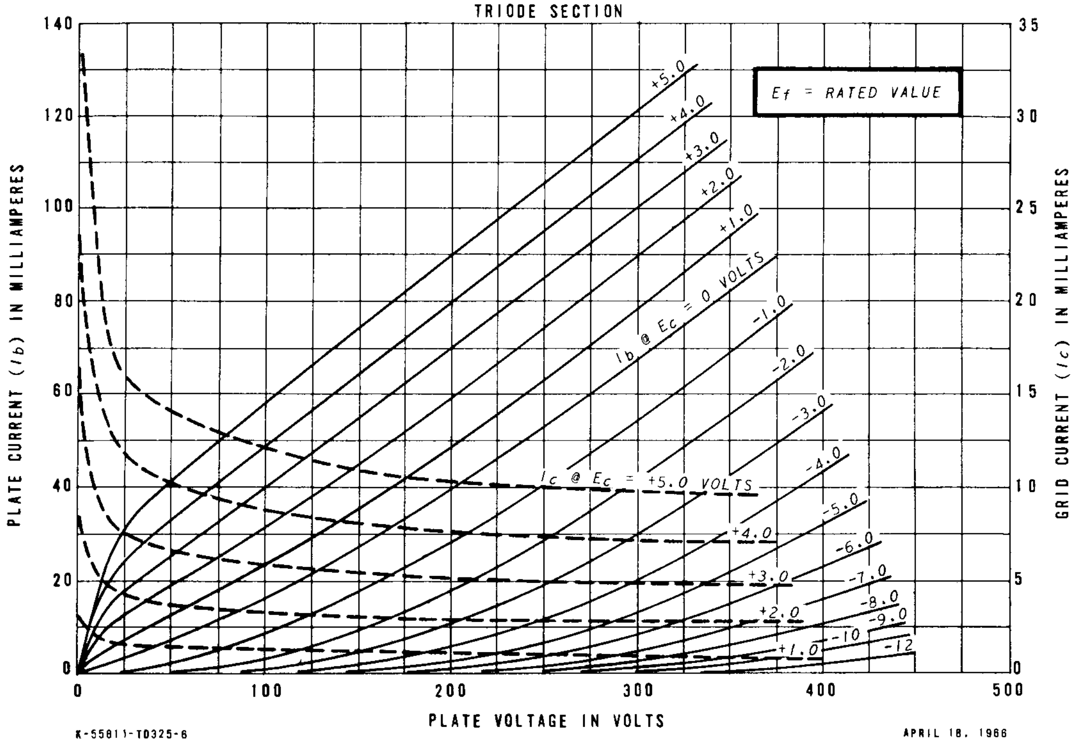
PENTODE SECTION



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AVERAGE PLATE CHARACTERISTICS

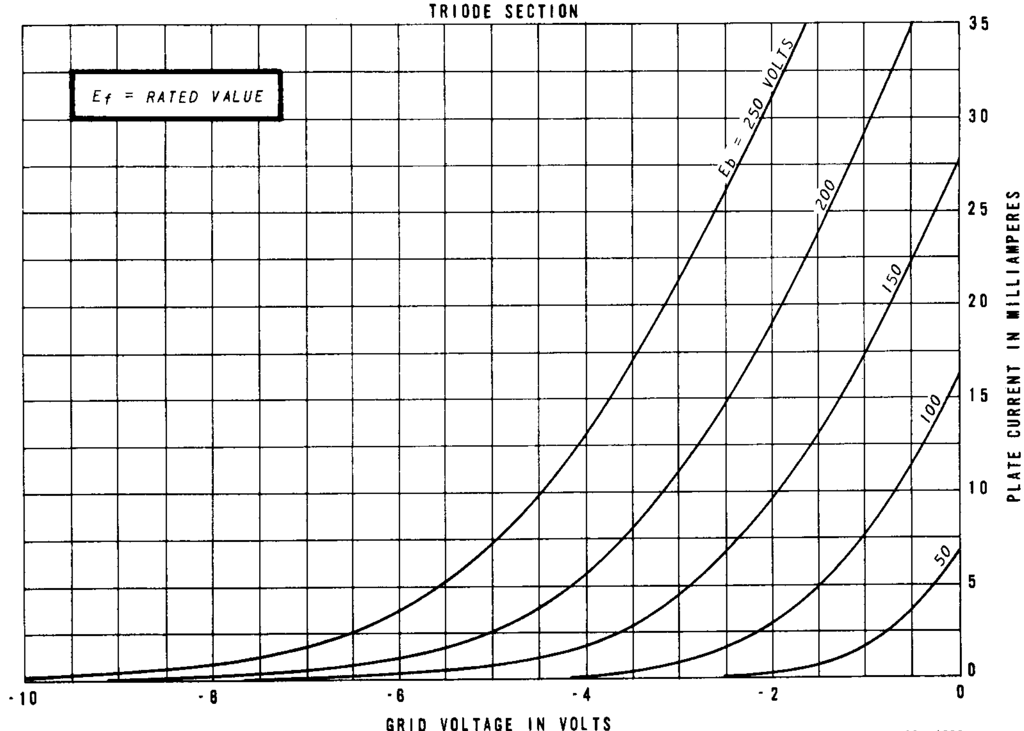
TRIODE SECTION



K-55811-TD325-6 APRIL 18, 1966

AVERAGE TRANSFER CHARACTERISTICS

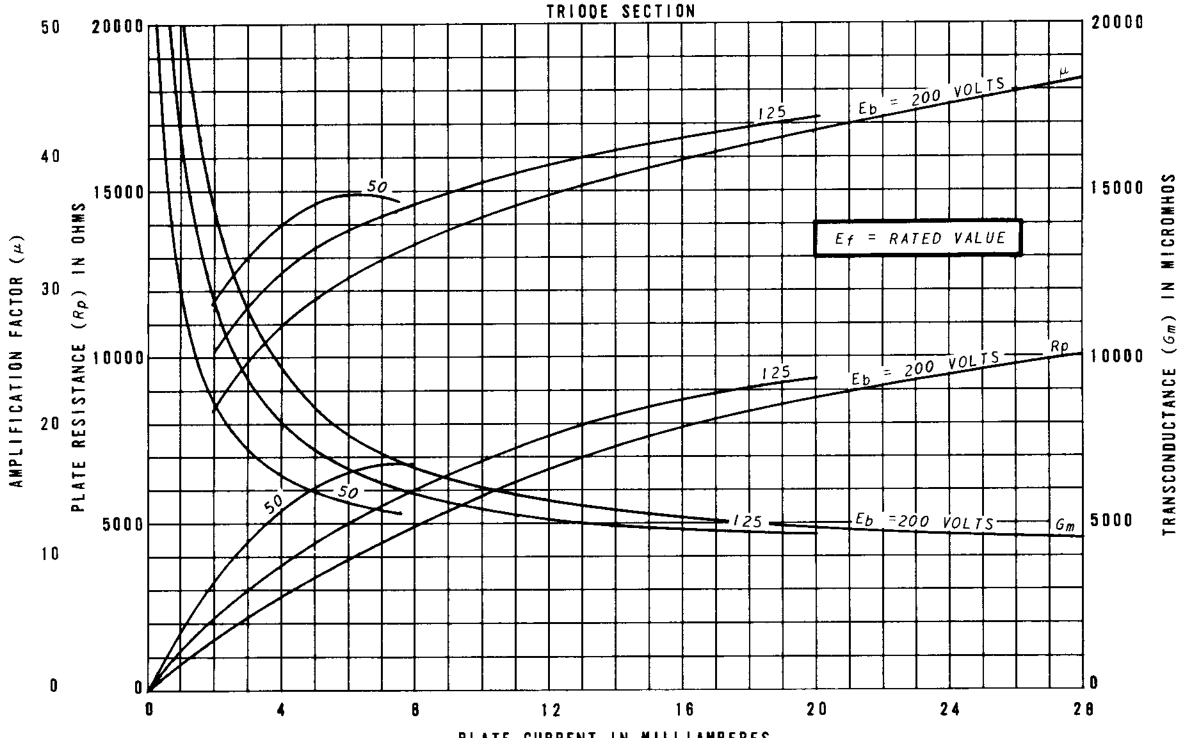
TRIODE SECTION



K-55811-TD325-7 APRIL 18, 1966

AVERAGE CHARACTERISTICS

TRIODE SECTION



K-55611-TD325-8 APRIL 18, 1966

TUBE DEPARTMENT

GENERAL ELECTRIC

Owensboro, Kentucky